claims 4-6 appears above. A mark-up showing the changes to claims 4-6 in red pen is attached for the Examiner's convenience.

Early and favorable action is earnestly solicited.

Respectfully submitted,

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CLAIMS PENDING AS OF NOVEMBER 14, 2000

1. A method for the wet chemical preparation of a materials library comprising a large number of solids from reaction mixtures having different compositions, characterized in that the reaction mixtures are introduced, in a spatially separated way, into microreaction chambers in removable reaction plates in a reactor and reacted, the solids produced in the reactions being deposited in a spatially separated way on a removable reactor bottom plate.

2. The method according to claim 1, wherein the reaction mixtures are reacted in the form of solutions or suspensions in the microreaction chambers, which are introduced into the reaction plates in the form of isolated cavities as bores, at temperatures of up to 1000 °C and internal pressures of up to 1000 bar.

3. The method according to claim 1, wherein the solids deposited on the reactor bottom plate are subsequently freed from the supernatant liquid phase and calcined.

4. The method according to claim 1, wherein the reactor bottom plate, which consists of a material that scatters X-rays elastically, is identical with the library substrate on which the solids are adhesively deposited and constitutes the materials library together with the deposited calcined solids.

5. The method according to claim 1, wherein a subset of all solids deposited is subsequently transferred to a plastic sheet made of a X-ray transparent material and provided with an adhesive coating, which plastic sheet as a library substrate constitutes the materials library together with the solids transferred thereto.

6. The method according to claim 1, wherein the solids of the materials library are subsequently characterized by non-destructive analytical methods.

7. The method according to claim 4, wherein the reactor bottom plate consists of a single-crystal slice, preferably of Si, Cu, quartz, rutile, anatase, zirconia, Ge, Al, sapphire, Fe, Ti, Zr, Co, Ni or Sn.

8. The method according to claim 7, wherein the reactor bottom plate consists of a (711) Si single-crystal wafer.

9. The method according to claim 4, wherein reflecting microarea X-ray diffraction is employed as an analytical method.

10. The method according to claim 5, wherein penetrating microarea X-ray diffraction is employed as an analytical method.

11. The method according to claim 5, wherein Kapton, Kevlar, Teflon, Mylar, PVC, polyethylene, polypropylene, polycarbonate, Al, Be or Mg in a layer thickness of < 100 µm is employed as said X-ray transparent material.

12. The method according to claim 5, wherein said layer thickness is below 10 µm.

13. The method according to claim 1, wherein said reactor has a layered design, essentially comprising: a reactor bottom plate, on top thereof a lower part of the reaction plate, made of an inert material, having bores of from 0.05 to 20 mm in diameter, on top thereof an upper part of the reaction plate, made of a hard material, having identical bores, on top thereof a sealing layer, on top thereof a layer of a hard material with which the reactor layers are compressed and sealed using suitable devices.

14. The method according to claim 13, wherein said inert material consists of Kapton, Teflon, graphite, Kevlar, Mylar or steel.

09/700401

MAIER ET AL.
371 OF PCT/EP99/03287

MARK-UP SHOWING CHANGES MADE TO CLAIMS 4-6 ON 11-14-2000



532 Rec'd PCT/PTO 14 NOV 2000

## CLAIMS:

1. A method for the wet chemical preparation of a materials library comprising a large number of solids from reaction mixtures having different compositions, characterized in that the reaction mixtures are introduced, in a spatially separated way, into microreaction chambers in removable reaction plates in a reactor and reacted, the solids produced in the reactions being deposited in a spatially separated way on a removable reactor bottom plate.

2. The method according to claim 1, wherein the reaction mixtures are reacted in the form of solutions or suspensions in the microreaction chambers, which are introduced into the reaction plates in the form of isolated cavities as bores, at temperatures of up to 1000 °C and internal pressures of up to 1000 bar.

3. The method according to claim 1, wherein the solids deposited on the reactor bottom plate are subsequently freed from the supernatant liquid phase and calcined.

4. The method according to ~~claims~~ claim 1 ~~to 3~~, wherein the reactor bottom plate, which consists of a material that scatters X-rays elastically, is identical with the library substrate on which the solids are adhesively deposited and constitutes the materials library together with the deposited calcined solids.

5. The method according to ~~claims~~ claim 1 ~~to 3~~, wherein a subset of all solids deposited is subsequently transferred to a plastic sheet made of a X-ray transparent material and provided with an adhesive coating, which plastic sheet as a library substrate constitutes the materials library together with the solids transferred thereto.

MAIER ET AL.
371 PCT/EP99/03287



claim

6. The method according to ~~claims~~ 1 ~~to 5~~, wherein the solids of the materials library are subsequently characterized by non-destructive analytical methods.

7. The method according to claim 4, wherein the reactor bottom plate consists of a single-crystal slice, preferably of Si, Cu, quartz, rutile, anatase, zirconia, Ge, Al, sapphire, Fe, Ti, Zr, Co, Ni or Sn.

8. The method according to claim 7, wherein the reactor bottom plate consists of a (711) Si single-crystal wafer.

9. The method according to claim 4, wherein reflecting microarea X-ray diffraction is employed as an analytical method.

10. The method according to claim 5, wherein penetrating microarea X-ray diffraction is employed as an analytical method.

11. The method according to claim 5, wherein Kapton, Kevlar, Teflon, Mylar, PVC, polyethylene, polypropylene, polycarbonate, Al, Be or Mg in a layer thickness of $< 100$ µm is employed as said X-ray transparent material.

12. The method according to claim 5, wherein said layer thickness is below 10 µm.

13. The method according to claim 1, wherein said reactor has a layered design, essentially comprising: a reactor bottom plate, on top thereof a lower part of the reaction plate, made of an inert material, having bores of from 0.05 to 20 mm in diameter, on top thereof an upper part of the reaction plate, made of a hard material, having identical bores, on top thereof a sealing layer, on top thereof a layer of a hard material with which the reactor layers are compressed and sealed using suitable devices.

14. The method according to claim 13, wherein said inert material consists of Kapton, Teflon, graphite, Kevlar, Mylar or steel.